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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 730,542	12 07 2000	Sung Kyu Ji	0655-0114P	9346

2292 7590 12 19 2002  
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EXAMINER  
WEBER, JON P

ART UNIT PAPER NUMBER  
1651

DATE MAILED: 12 19 2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/730,542

Examiner

Jon P Weber, Ph.D.

Applicant(s)

JI, SUNG KYU

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 17 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

*Status of the Claims*

The response with amendments filed 17 October 2002 has been received and entered.  
Claims 1-3 have been presented for examination.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by newly cited Jensen (US 3,969,540).

Jensen (US 3,969,540) disclose preparing metal proteinates by 1) suspending the protein material in water, 2) incompletely digesting the protein with protease (not to amino acids, column 2, lines 40-44), 3) adjusting the pH to slightly alkaline pH values of 7.5 to 10 (column 3, lines 50-53), and 4) precipitating the hydrolyzed peptide mixture with any of several metal salts (see claim 3). The metal proteinate may be dried to a powder for use as a dietary supplement (paragraph bridging columns 3 and 4). Zinc was used in examples 1, 7, and 10-12. Proteases from animal, plant, bacterial or fungal sources may be used (column 2, lines 57-61): a mixture of

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papain, bacterial and fungal protease in examples 1-7, bacterial protease in examples 8-9, bromelain in example 10, papain in example 11, and pancreatin and pepsin in example 12.

Protein is 20% by weight volume of water (column 2, lines 45-48), and protease is 1-10% based on protein (column 2, lines 59-61). Hence the ratio of protein:water:protease is 0.20:1.0:0.001-0.01, which normalizes to 100:1000:1-10.

### ***Claim Rejections - 35 USC § 103***

Claims 1-3 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ashmead (US 4,172,072).

It is argued that the instant protease is animal while Ashmead uses plant protease. As a consequence the Ashmead peptides are too small, 1, 2 or 3 residues most commonly compared to the instant peptides that are larger, at least 4 and mostly 6-10 residues. It is argued that the larger peptides are needed to get proper chelation. It is urged that the smaller peptides form aminates that complex with the zinc. The aminate is said to have chemistry giving free zinc ion.

The distinctions urged by the argument are not in evidence in the claims or the disclosure. Neither the disclosure nor the claims are limited to animal proteases. No evidence has been presented that it makes any difference to use plant or animal proteases.

Figure 1 shows a proposed structure of a zinc-peptide chelate. However, there is nothing in the disclosure that requires that this is the only possible structure. The aminate forms shown in the argument is not disclosed or in evidence in the claims. There is no evidence presented that it is known in the art that this is the correct chemistry, with only the carboxyl groups coordinating the zinc. In Figure 1, both amino and carboxyl groups on the wrap-around peptide are shown

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coordinating the zinc. There is no evidence that the two tripeptides shown in the argument fail to perform exactly the same function as the hexapeptide.

Claims 1-3 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen (US 3,969,540).

The teachings of Jensen (US 3,969,540) have been discussed above. Jensen (US 3,969,540) lack the exact ratio of protein to water to protease.

A person of ordinary skill in the art at the time the invention was made would have been motivated to make a small modification in the ratio of protein to water to protease in the method of Jensen (US 3,969,540) because the instantly claimed ratio in claim 2 of 100:800:2-4 is not significantly different from the 100:1000:1-10 of Jensen (US 3,969,540), i.e., slightly more concentrated during the digestion stage. The amount of added protease as claimed is encompassed by that disclosed by Jensen (US 3,969,540). It would not involve anything more than routine optimization of a result effective variable to modify the protein/water ratio of Jensen (US 3,969,540) to the instantly claimed ratio.

Hence, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use slightly more concentrated solution during the protease digestion step.

No claims are allowed.

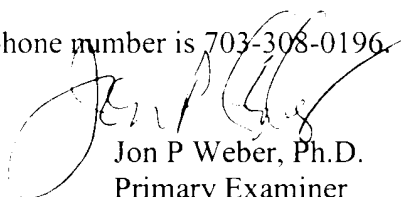
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon P Weber, Ph.D. whose telephone number is 703-308-4015.

The examiner can normally be reached on daily, off 1st Fri, 9 5 4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Wityshyn can be reached on 703-308-4743. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.



Jon P Weber, Ph.D.  
Primary Examiner  
Art Unit 1651

JPW  
December 17, 2002